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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,907	11/02/2001	David Schaible	541.1029US2	6133

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EXAMINER

HALPERN, MARK

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 08/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/010,907

Applicant(s)

SCHAIBLE ET AL.

Examiner

Mark Halpern

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 12/2/02. 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

- 1) Claim 18 is objected to because of the following informalities: claim 18 depends from claim 1; perhaps claim 18 should depend from claim 17, where "bleaching" is recited. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- 2) Claims 1-28, are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Claims 1, 12, fail to recite that the cooked pulp is being hydrolyzed to form microcrystalline cellulose without the use of any mineral acids, which is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3) Claims 1-28, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 12: step (b) is not complete since the step of pressing of the pulp should further state it is for removing water.

Claim 18 recites the limitation "the bleaching step" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4) Claims 1-3, 5-28, are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshkov (3,954,727) in view of Jollez (WO 99/60027), and further in view of Nimz (5,074,960).

Claims 1, 11-12: Toshkov discloses a process of preparing microcrystalline cellulose. The pulp is placed into a reactor and cooked by heating the reactor at a desired temperature and pressure for a duration of time to obtain a desired degree of polymerization. Process temperature, pressure and duration are disclosed. (Toshkov, col. 2, lines 28-68). After cooking the reactor is cooled with water. It would have been obvious that water-cooling of the reactor would necessitate a partial depressurizing of

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the reactor in order to keep structural integrity of the reactor. The microcrystalline cellulose is separated from the hydrolysate; it is filtered, de-aggregated in a colloid mill, bleached and dried (Toshkov, col. 2, lines 2-63). Toshkov is silent as to repulping of the pulp, pressing and decompaction prior to placing into a reactor. Jollez teaches that in making high purity microcrystalline cellulose it is normal practice to prepare the pulp for reaction by first repulping, filtration and trituration prior to placement into a reactor for cooking. Thus, it would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of Jollez and Toshkov, because such a combination would provide a product of Toshkov utilizing an environmentally friendly process as disclosed by Jollez (pg. 3, lines 21-26, and pg. 7, line 30 to pg. 8, line 5). It would have been obvious to preheat the reactor to a desired temperature prior to placing the pulp into the reactor because it would reduce the microcrystalline cellulose formation time and provide better control of the process, which is desired and disclosed by Jollez (pg. 9, lines 24-29). Toshkov is silent on pressing and decompacting in the pulp preparation. Nimz discloses a process of preparing alpha-cellulose (col. 3, lines 35-38), in which process it is a normal procedure/practice to press the pulp and then fluff the pulp prior to reaction (Nimz, col. 7, lines 44-54). It would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of Nimz and Toshkov, because the pressing and then fluffing of the pulp prior to reaction would individualize fibers and understandingly provide for better reaction control in the process of Toshkov.

Claim 2: application of a shearing force is disclosed by Jollez in Abstract.

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Claims 3, 6: deaggregating is performed using a colloidal mill is disclosed by Toshkov (col. 1, lines 40-45).

Claim 5: the water is added to the microcrystalline cellulose and the solution alkalized to a pH above 5.5 (col. 5, lines 54-60).

Claims 7, 13: repulping is carried out at a consistency of 2 % (Jollez, pg. 12, line 19).

Claims 8, 14: cooking is carried out with the addition of diluted hydrochloric acid (Toshkov, col. 1, lines 21-25).

Claims 9-10, 15-16: cooking is carried out at temperature range of 200-240 °C for a time period varying from 4 to 24 minutes, depending on the desired degree of polymerization (Jollez, pg. 9, lines 4-7).

Claims 17-23: Jollez discloses cellulose bleaching with hydrogen peroxide at temperature of 60-120 °C, pressure from 60 to 120 psi, under air pressure of 60-120 psi, in the presence of magnesium sulfate (pg. 9, lines 11-16).

Claims 25-26: pH is disclosed from 3.5-7.7 (Jollez, pg. 11, line 9).

Claims 27-28: the degree of polymerization is stable and can be optimized to a desired degree (Jollez, pg. 7, lines 18-24).

5) Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toshkov in view of Jollez, and Nimz, and further in view of Hanna (6,228,213). Toshkov in view of Jollez, and Nimz, is applied as above for claim 1, Toshkov in view of Jollez, and Nimz disclose the drying step, however fail to disclose that the drying is performed with a spray dryer. Hanna discloses a process of making pharmaceutical grade

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microcrystalline cellulose (Hanna, col. 1, lines 15-33) wherein drying of the microcrystalline cellulose is performed using a spray dryer (Hanna, col. 4, 58-64). It would have been obvious, to one skilled in the art at the time the invention was made, to combine the teachings of Toshkov, Jollez, Nimz and Hanna, because such a combination would lower drying time in the process of Toshkov as disclosed by Hanna (Hanna, col. 4, lines 55-58).

Conclusion

6) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Halpern whose telephone number is 703-305-4522. The examiner can normally be reached on Mon-Fri, (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703-308-1164. The fax phone numbers for the organization where this application is assigned are 703-872-9310/9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

MH

Mark Halpern
Patent Examiner
Art Unit 1731

July 31, 2003



PETER CHIN
PRIMARY EXAMINER